economic conditions and / or repeated exposure to adverse conditions. Children who have a deficit in height for age (z score < -2) are stunted, which is more a long term effect of under nutrition, disease, and other factors affecting growth.

Data on weight and height were also analyzed on sub-groups of the 6-59 months age group, because of age related difference in the prevalence of wasting. The age group 6-29 months has been considered here separatly.

Survey organization

Recruitment of surveyors:
Three senior medical officers as supervisor and 9 survey teams, each team consisted of a medical doctor and a senior nurse as surveyors were recruited from among potential candidates for the duration of the training program and conducting the survey. Local guides on the recommendation of community leaders were recruited for assisting in the survey operation and persuading the residents to participate in the survey.

Training of surveyors:
As the quality of data depends largely on adequate training of surveyor,a 4 day extensive training program was conducted covering theoretical and practical aspects of anthropometric measurements, interview techniques, procedures to select the first house-hold in the cluster, proper filling of the survey forms as well as defining the role and task of each member of the survey. The second part of the training program was carried out in a community and doing house to house visit, and each survey team member had given the opportunity to conduct interviews, take anthropometric measurements and fill-up the forms several times. This practical training ensure uniform and standardized procedure and the surveyors have the chance to practice taking anthropometric measurement in a real working environment, under the close supervision of the team leader supervisor.

Survey finding

The data was analyzed using Epi-Infor version 6.4b software from CDC Epicenter WHO and the anthropometric indexes were calculated with Epinut software from Epicenter.

In a total population of 63048 at the survey area 923 children (6-59 months) were examined in the 30 cluster surrounding Mehterlam in Laghman province, but only 913 records were analyzed, 10 children had indeed to be excluded from the analysis due to unreliable data.

Questionnaires were filled and weight for height measurement were carried out for each child in house to house visit.

Demographic characteristic of population

Demographic characteristics are important in assessing the overall nutrition situation. In this regard the composition of the household in terms of the number of dependents and bread earners, age of households members and sex composition is also important. In surveyed area it was found that family size to be 9.3 person, this means that more food is needed to feed dependent household members that is women, children and old people.

The under 15 years of age group constitute 61.5% of the population which puts a fairy large portion of the population in the economically unproductive bracket, hence leading to the greater dependency on the bread earner, this often leads to malnutrition as a major health problem with children becoming a high risk group.

Also the low percentage of live expectancy which found that only 3% of population were alive after 60 years of age, shows and reflect the unsuitable socio cultural and socio economic situation of the community.

Table I: Distribution by age and sex

Age Class	Boys		Girls		Total		Sex Ratio
	N	%	N	%	N	%	
06-17	128	51.2%	122	48.8%	250	27.4%	1.05
18-29	162	48.6%	171	51.4%	333	36.5%	0.95
30-41	118	50.9%	114	49.1%	232	25.4	1.04
42-53	41	56.9%	31	43.1%	72	7.9%	1.32
54-59	15	57.7%	11	42.3%	26	2.8%	1.36
Total	464	50.8%	449	49.2%	913	100.0%	1.03

The sex ration of the sample (M/F) is 1.03, which shows that survey sample is a reasonably good representation of the whole population.

Concerning the repartition of the sample according to age group, it appeared that age group 18-29 months is over represented whereas age group 42-53 and 54-59 months are under represented. Either our sample is not representing of the population, or this repartition is a real fact in the population – the high infantile mortality rate and maybe some health and economic problems can explain this repartition – Moreover it has to be noticed that child's age is often not well known and determined.

Nutritional Status

The global acute malnutrition rate expressed as a Z-score was 6.4% (95% confidence interval 4.3-9.2%) including 1.0% of sever malnutrition (ci: 0.3 – 2.6%). Expressed as a percentage of the median, the overall global acute malnutrition rate was 3.8% (ci: 2.3 – 6.2%), including 0.5% of median (ci: 0.1 – 1.9%) of severe malnutrition .

Table 2: Overall acute malnutrition prevalence, Laghman May 1999

	SEVERE	MODERATE	GLOBAL
Z-Score	1.0%	5.4%	6.4%
	(0.3 – 2.6%)	(3.3% - 8.1%)	(4.3 – 9.2%)
% of Median	0.5%	3.3%	3.8%
	(0.1 – 1.9)	(2.3% - 4.4%)	(2.3% - 6.2%)

Two female oedema cases (Marasmus/Kwashiorkor) were found during the survey.

Weight for height indices versus oedema:

Table 3: Weight for height index versus oedema Laghman May 1999

	WHZ < -2SD	
Oedema	Marasmus/kwashiorkor	kwashiorkor
	2	0.0
No Oedema	Marasmus	Normal
	56	855

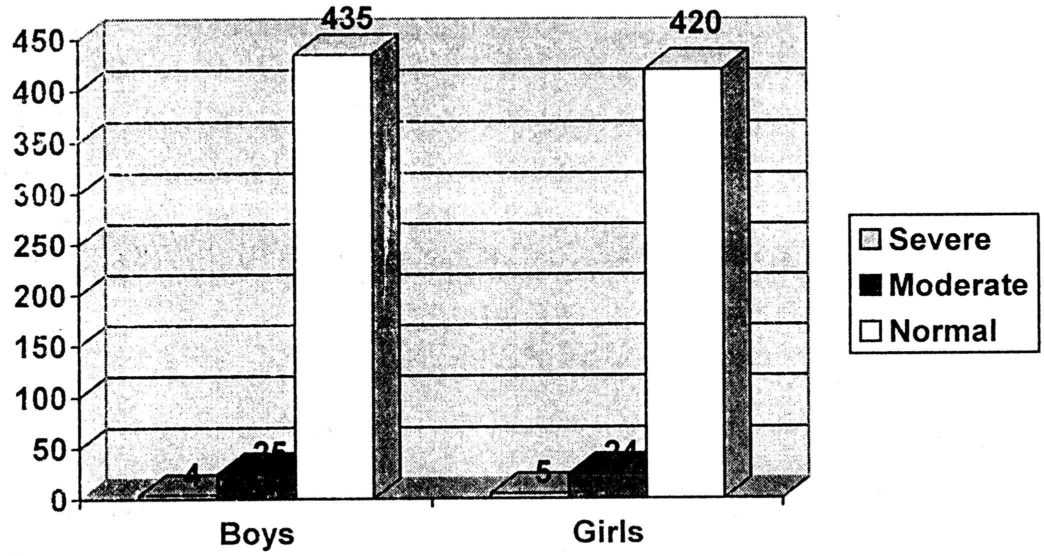
Two Oedema cases were found during the survey both were presenting with symptoms of marasmus and kwashiorkor.

Malnutrition versus age group:

Table 4: WHZ and oedema distribution versus age, Laghman May 1999

Age class	Total	WHZ<-3SD		-3SD<WHZ<-2SD		WHZ>-2SD		Oedema	
In months	N	N	%	N	%	N	%	N	%
06-17	250	4	1.6	21	8.4	224	89.6	1	0.4
18-29	333	2	0.6	22	6.6	308	92.5	1	0.3
30-41	232	1	0.4	3	1.3	228	98.3	0	0.0
42-53	72	0	0.0	2	2.8	70	97.2	0	0.0
54-59	26	0	0.0	1	3.8	25	96.2	0	0.0
Total	913	7	0.8%	49	5.4%	855	93.6%	2	0.2%

Prevalence of malnutrition in surveyed sample (according to Z –Score)



Socio cultural characteristics of population:
Socio cultural characteristics are important in assessing the underlying factors of malnutrition in community. It was found that 47.2% of the family were extended and 52% were nuclear which adversely reflected on food diversity and sanitation of the community.

Also the high percentage of un-healthy sanitation seems to be one of the causes of diarrhea, dysentery and other infectious diseases, which considered the underlying factors of malnutrition.

The survey found high percentage of illiteracy which was 95.1% in females and 45.5% in male, which adversely effect on health nutrition education and personal hygiene..
Also the survey found that 86% of sample population live in very low social condition, this means that majority of the population has poor accessibility to basic minimum needs.

Gender preference in Eating:
Gender preference in eating reveals that who eats the best is based on the social status and who controls the economy. In both the cases male member take the first and the children taking the second position in eating.

Feeding and Weaning characteristics of surveyed population:
Feeding and weaning characteristic are important step in assessing nutritional status of children specially in children under two years age.
In this regard it is found that the KAP of mothers regarding feeding and weaning are poor.

Starting characteristic of Breast feeding in survey area (Laghman May 1999)

Starting	Number	%
1st four hours	353	68.0
Within 3 days	162	31.2
Later	3	0.6
Never	1	0.2

Only 68% of the women having a surveyed child less than two years old started to breast feed their child during the first few hours after delivery.

Characteristic of exclusive breast feeding in surveyed area (Laghman May 1999)

Duration	Number	%
Less than four months	63	12.1
4 – 6 months	271	52.2
up to one year	145	27.9
Still	40	7.7

35.6% of the surveyed children aged less than two years old (more or equal to 6 months) were still exclusive breast fed after six months, it means that mothers start weaning after six months are not according to WHO recommendation to start weaning between 4 & 6 months.

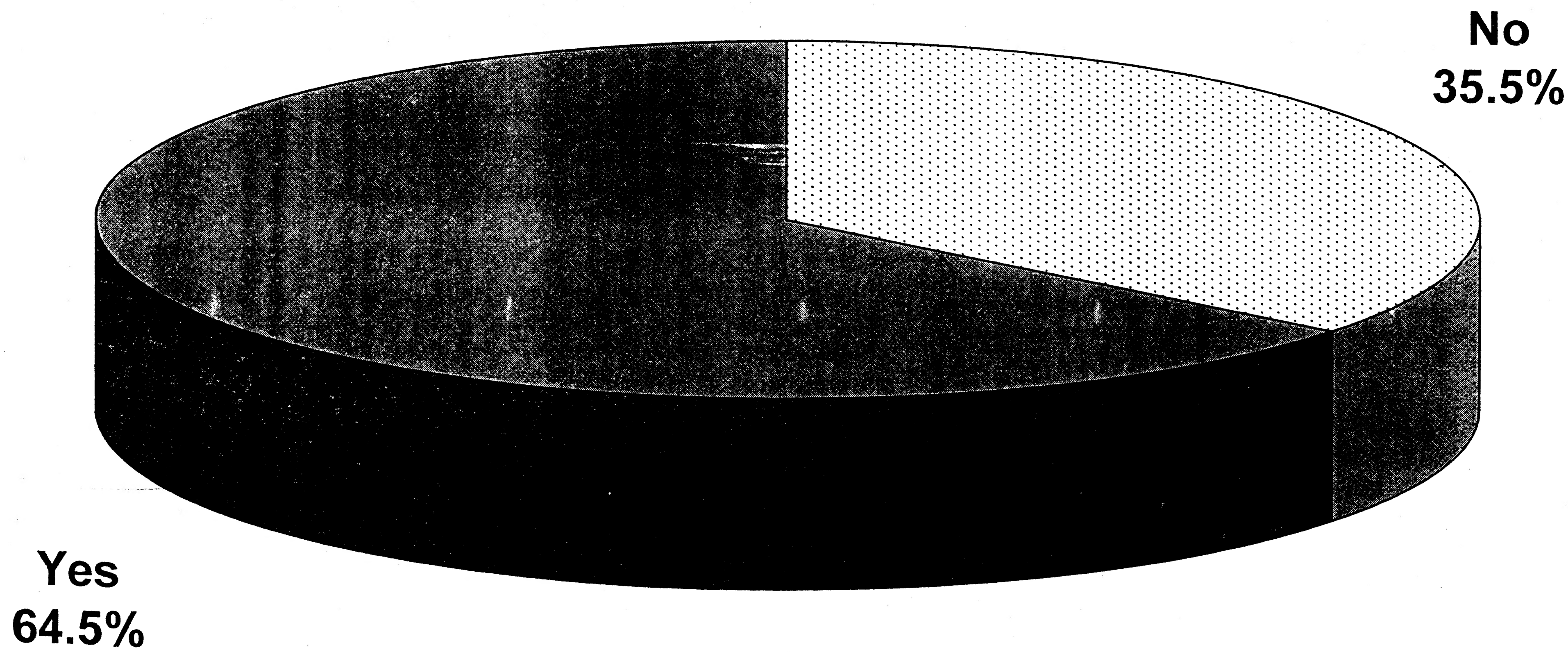
Stopping behavior of B.F. in surveyed area (Laghman May 1999)

In 105 children who already stopped B.F., they stopped at:

Age	Number	%
Less than 4 months	7	6.7
Between 4 – 6 months	8	7.6
6 –11 months	32	30.5
12 – 17 months	45	42.9
18 – 24 months	13	12.4
Total	105	100%

For those who already stopped BF, 30.8% started weaning between 4 – 6 months and stopped BF after one year & half. The other either started weaning before 4 months or after 6 months or stopped BF before one year and half, which means that weaning started so early or so late in surveyed area.

Vitamine A intake in the surveyed sample



In those who stopped BF. 95.4% stopped suddenly.
In those who advised on weaning 64.7% were advised by relatives or friends and 8.7% were advised by Daya (TBA) and only 26.6% were advised by PHC or other medical staff, which revealed poor role of medical staff in BF practice.

Vaccination Coverage in Surveyed area (Laghman May 1999)

Vaccination	Number	%	Cum. %
Regular	345	66.5	66.5
Irregular	147	28.3	94.8
Not	27	5.2	100
Total	519	100%	

It means that still vaccination program is not covered all the surveyed area and in need to expand vaccination coverage to reach all scattered villages.
In surveyed area it was found that 58.2% of children less than 2 year old had suffered from diarrhea or vomiting and 22.7% had suffered from respiratory infection. It means that diarrhea and respiratory infection consider two major health problem in children less than 2 years.

Also 34.7% of mothers reduce or stopped BF during the illness, which need to health education.

Discussion:

Afghanistan is the country where health nutrition and socio economic infrastructure has severely suffered. Long destructive war facilitate all predisposing factors (poverty, lack of food's, infection, social disadvantages, psychological deprivation and anorexia that lead to high morbidity and mortality among children in Afghanistan moreover all risk factors related to malnutrition are present at both household and country levels, which needs a multidimensional approach for its control and prevention. These conditions no doubt result in deterioration of the nutritional level particularly the vulnerable groups.
Factors affecting household food security adversely include food shortage, low income, rising food prices and large family size.
Poor access to safe drinking water in rural population from one side and low level of socio cultural status with inadequate health services from other side have resulted in high prevalence of parasitic and infectious diseases:
The very low literacy rate particularly among women is a major obstacle in efforts aimed at promoting health and nutrition awareness of the public. Since all the above mentioned factors have negatively influenced the nutritional status of population according the prevailing situation in the socio economic environment, there is a strong need to promote various sectors in order to reduce the malnutrition prevalence among the population. Multi-sectional approach with the senior representatives of concerned sectors (Ministry of health, education, agricultural, Finance, and planning) is the key strategy for promotion of nutritional status at the national level.

The main objective of this survey was to understand the nutritional status of the children 6 – 59 months) in Laghman province and to determine the need and type of intervention and assess the priorities for allocation of resources as recommendation for other aid agencies for necessary intervention.
As mentioned previously the prevalence of acute malnutrition rate was 6.4% with 95% confidence interval (4.3 – 9.2%) and severe malnutrition rate was 1.0% with (ci 0.3 – 2.6%) in surveyed area. Regarding to age group it was found that children less than two year and half (6 – 29 months) suffered more from acute and severe malnutrition than age 2 – 5 years. As acute maluntrition in children less than two year and half was 8.7% with (ci 5.8 – 12.8%) and severe malnutrition was 1.4% with 95% confidence interval 0.4 – 3.7% in which wrong feeding and weaning might be one of the cause.

Recommendation

1. Promotion of growth and nutrition in the community through:
Improvement of infant feeding practices, Exclusive BF immediately after birth till 4 – 6 month and introduction of suitable complementary foods from a mixture of locally available food by about 4 –6 months.

- Improvement of child care and integration of growth promotion and nutrition counseling in the services provided by MCH and BHC units.
- Health education on nutrition, sanitation, personal hygiene, diarrhea and parasitic disease.

2. Strengthening of primary health care services with primary focus on nutrition program.

- To introduce and encourage the growth monitoring of children at BHC, and MCH units.
- To upgrade the skills and knowledge of PHC health workers including TBAs and VHVs on nutrition counseling, early detection of malnutrition and referral of malnourished children for proper nutrition care.
  Traditional Birth Attendant (TBA) and VHVs who are currently under training should be given additional training to participate in the early detection of malnourished children. TBAs should periodically carry out house to house visit and measure the mid upper arm circumference (MUAC) of children. In case of child measurement fall below < 13.0 cm, should be referred to a clinic for further investigation and monthly growth monitoring.
- To increase the number of TBAs to reach at least one TBAs for each village.
- To improve the knowledge and skills of TBA as well as CHWs on prevention and management of diarrhea diseases among children is essential to reduce the prevalence of malnutrition among children resulted from diarrhea.
- To establish the nutrition center in BHCs to set up the supplementary feeding programs and nutrition education programs.

- To improve the quality of health services particularly at basic health centers with the aim to improve the EPI coverage.
- To establish and strengthen ORT corners.

3. Establishing an intensive rehabilitation program at zone level for management severely malnourished and dehydrated children.

- Follow up after recovery and enrolment in weaning food scheme to be developed.
- Stress to develop a subsidized weaning mix food program.
- Nutrition supplementary feeding program:

Depending on the availability of resources and long term sustainability, the nutrition supplementary program should be set up at nutrition centers of BHCs under the close supervision of nutrition focal point coordination board at provincial level.

4. Safe motherhood initiative is considered as the basic principle for improvement of pregnant and lactating mothers health status.

- Insure that individuals and couples have the information and services to plan the timing number and spacing pregnancies.
- Ante natal care to prevent complication where possible.
- Clean safe delivery to insure that all birth attendants have knowledge, skills and equipment to perform a clean and safe delivery and provide postpartum care to mother and baby.

5. Promotion of inter-sector collaboration on nutrition:

- To address Basic Minimum Need (BMN) (Education, Nutrition, Immunization, safe water and basic sanitation) this needs a collaboration between different sector specially health, education and agriculture departments at least on provincial level. Collaborative implementation of inter-sectional measures to achieve the nutrition objectives at the operational level requires the establishment of a coordinating committee which can be linked to district, provincial and regional health management teams. A person should be nominated as the nutrition focal point in the nutrition coordination committee which consist of representative of different sectors from different governmental department and humanitarian organizations.
- Improvement of literacy rate with emphasis on female education:

6. Nutritional surveillance: It is needed, useful to carry out regular nutritional assessment at least annually in three provinces of the zone (Laghman, Kaunar and Ningrahar). Survey result should be analyzed and shared with different agencies as well as with governmental departments of concerned areas for planning management and evaluation of nutrition.

7. Improving the socio economic situation of population in target area by initiating income generation schemes through BDN projects, such as goat raising, fish breeding, production of baskets and brooms, sewing and knitting, kitchen gardens, agriculturs products, pruning of fruit trees, bee keeping and poultry, community pharmacy, handicraft, husbandry dairy products and etc.

ANNEXES

Acknowledgements

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- And finally, I would like to say special thanks to CCMAC for the provision of accommodation facilities in Laghman Province.

Average population density in village

Name of District	Qarghai	Alingar	Alishing	Total
Population	114996	123291	63296	301583
No.of villages	33	111	130	274
Density	3484.72	1110.72	486.89	1100.66

Mean percentage of Occupation

Occupation	Qarghai	Alingar	Alishing	Total
Agriculture	80%	30%	40%	
Husbandry		5%	2%	
Labour wood trading	0	0	2%	
Handicrafts	3%	0	0	
Traders	0	0	0	
Others	17%	65%	65%	

No. of Health Facilities

Type of Facility	Qarghai	Alingar	Alishing	Total
hospital	0	0	0	
BHC	3	2	1	
MCH Centres	1	0	1	
Sub Centre	0	1	0	
Permitted Pharmacy	2	0	6	
Unpermitted Pharmacy	10	2	15	
Laboratory	3	2	2	
Private Clinic	12	2	0	
EOC	0	0	0	

Manpower

Personnel	Qarghai	Alingar	Alishing	Total
Surgeon Specialist	0	0	0	
Paediatric Specialist	0	0	0	
Physician	5	4	2	
Gynaecologist	1		1	
Dentist			1	
Assistant Doctor	1	2	1	
Nurse	3	0	1	
Midwife	0	0	0	
Mid Level	2	2	2	
Pharmacist	2	0	0	
Lab. Technician	3	2	2	
Malaria Technician	0	0	0	
Health Educator	1	0	1	
CHW	2	20	2	
Vaccinator	4	4	4	
Physiotrapist	0	0	0	
TBA	0	0	23	
MCH worker	0	0	0	
Anesthesilog	0	0	0	
Supportive staff	0	0	0	
Total				

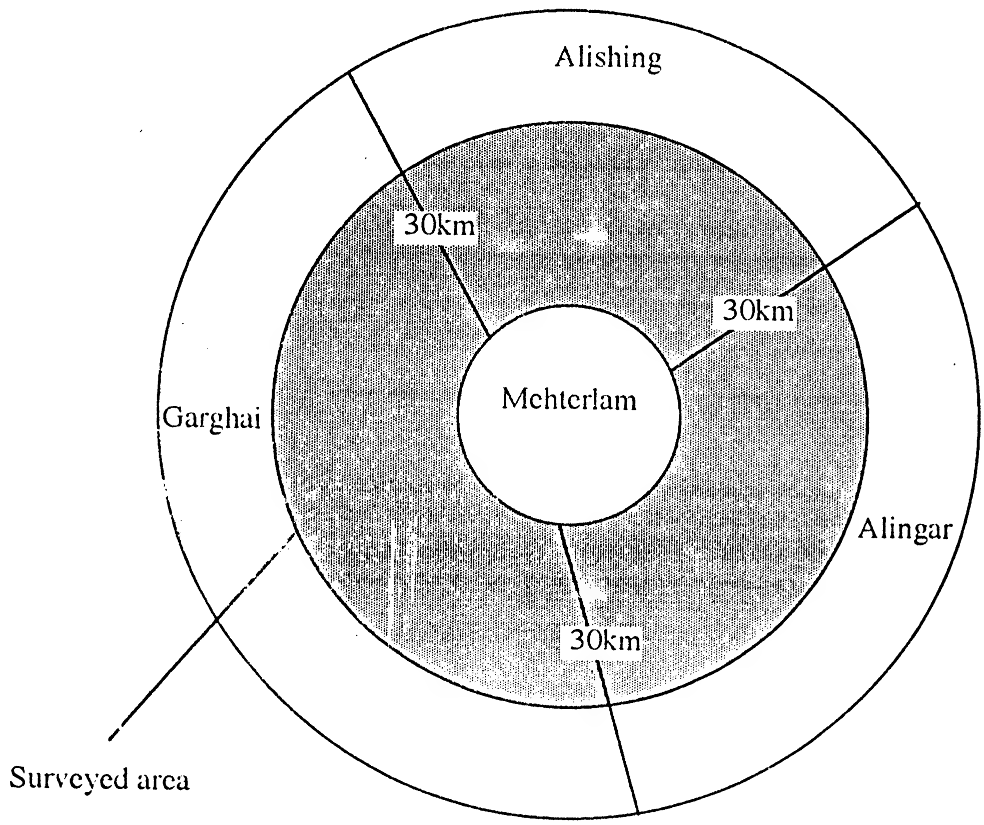
Education Rate and Facilities

Name of District	Qarghai	Alingar	Alishing	Total
Education Rate	40%	30%	11%	
Madrassa	8%	3%		
Primary School	12%	15%	10%	
High School	1%			

Source of Water

Source District	Qarghai	Alingar	Alishing	Total
Spring				
Stream	40%	35%	1%	
River	20%	20%	90%	
Karez	0	20%		
Well	30%	20%	9%	
Pool, Pump		3%		
Tape Water		2%		

Cluster Sempaling



List of localities selected for the survey

* Total number of the village on tht list = 87
* Total cumu lated population = 63048
* Total number of cluster for the survey = 30
* Sampling interval = 2102
* Random number selected = 0180

No	Name of Village	Name of district	Popolation of village	cumulative popolation	Cluster No.
1	Hagian	**Alishing**	180	180	1
2	Saber abad		960	2580	2
3	Mianz Keli		560	4930	3
4	Kalatak		1000	7220	4
5	Gargar,Kasigar		895	9429	5
6	Kalai Khan		960	11850	6
7	Islamabad		980	14090	7
8	Bar Shamram		1600	16600	8
9	Sakhra	**Alingar**	815	18450	9
10	Kanda		1200	20890	10
11	Ghondai		420	23195	11
12	Kalatak		440	25405	12
13	Torai gambakage		820	27280	13
14	Mia Khil		2400	29680	14
15	Mandozi		825	32580	15
16	Alajigar		940	34440	16
17	Parvai		1630	36070	17
18	Warnata		890	39705	18
19	Shahi		1100	41925	19
20	Mandrawa	**Qarghai**	830	43225	20
21	Kharati		1400	45385	21
22	Farman Khil		1460	47675	22
23	Adramzi		1650	49955	23
24	Aghr abad		465	51531	24
25	Swati		720	53293	25
26	Qalai Rahin		1680	55403	26
27	Arwa		940	57368	27
28	Markaz Charbagh		550	59388	28
29	Tarakhil		1270	61298	29
30	Kariem abad		510	63048	30

Annex II

List of Villages in Surveyed Area

No	Village	District	Population of Village	Cumulative Population	Cluster Number
1	Hajian	Alishing	180	180	1
2	Shakerman	Alishing	640	820	
3	Hasanzi	Alishing	800	1620	
4	Saberabad	Alishing	960	2580	2
5	Ghondi	Alishing	240	2820	
6	Dagian	Alishing	160	2980	
7	Sharbat Kheil	Alishing	350	3330	
8	Ganjawer	Alishing	1040	4370	
9	Mianz Keli	Alishing	560	4930	3
10	Qalai Gul Ahmad	Alishing	220	5150	
11	Mirza por	Alishing	250	5460	
12	Gomba	Alishing	820	6120	
13	Kalatak	Alishing	1000	7220	4
14	Tangi Kachen	Alishing	480	7860	
15	Kuz Shamraam	Alishing	850	8530	
16	Gar gar & Kasigar	Alishing	895	9429	5
17	Kalai Kochia	Alishing	175	9600	
18	Sar Kalai	Alishing	560	10160	
19	Saro Khil	Alishing	430	10590	
20	Kochan	Alishing	400	10990	
21	Kalai Khan	Alishing	860	11850	6
22	Gardai	Alishing	320	12170	
23	Barekzai	Alishing	940	13110	
24	Islamabad	Alishing	980	14090	7
25	Rain	Alishing	910	15000	
26	Barshamram	Alishing	1600	16600	8
27	Kochan	Alishing	155	16755	
28	Ali Kheil	Alingar	880	17635	
29	Sakhva	Alingar	815	18450	9
30	Qasaba	Alingar	410	18860	
31	Teangawer	Alingar	830	19690	
32	Kandah	Alingar	1200	20890	10
33	Shikhan	Alingar	975	21865	
34	Sabakhil	Alingar	860	22725	
35	Ghondai	Alingar	470	23195	11
36	Kotakhil	Alingar	520	23715	
37	Nimnany	Alingar	1250	24965	
38	Kalatak	Alingar	440	25405	12
39	Sherabad	Alingar	645	26050	
40	Kalai Wazir	Alingar	410	26460	
41	Tori garmbakaje	Alingar	820	27280	13
42	Miakhil	Alingar	2400	29680	14
43	Panje Kora	Alingar	815	30495	
44	Shikhan	Alingar	740	31235	
45	Chopanan	Alingar	520	31755	
46	Mandozi	Alingar	825	32580	15
47	Charkalai	Alingar	920	33500	
48	Alajiker	Alingar	940	34440	16
49	Pavai	Alingar	1630	36070	17
50	Mangou	Alingar	2500	38570	
51	Warnatah	Alingar	890	39705	18
52	Adar	Alingar	245	39705	
53	Darank	Alingar	420	40125	
54	Shagai galah	Alingar	700	40825	

Annex II

List of Villages in Surveyed Area

55	Shahi	Alingar	1100	41925	19
56	Dapi	Qarghai	470	42395	
57	Mandrawer	Qarghai	830	43225	20
58	Kharoti	Qarghai	1400	44325	21
59	Kaka Khil	Qarghai	350	44975	
60	Qalai Qazi	Qarghai	410	45385	
61	Shangana	Qarghai	470	45855	
62	Ghodi	Qarghai	360	46215	
63	Farman Khil	Qarghai	1460	47675	22
64	Balochabad	Qarghai	310	47985	
65	Kamalpor	Qarghai	320	48305	
66	Adramzai	Qarghai	1650	49955	23
67	Malakhil	Qarghai	406	50361	
68	Bolan	Qarghai	425	50786	
69	Sordag	Qarghai	280	51066	
70	Merab Kalai	Qarghai	522	51588	
71	Agherabad	Qarghai	465	52053	24
72	Dergher	Qarghai	520	52573	
73	Dandar	Qarghai	825	53398	
74	Sokhta qala	Qarghai	430	53828	
75	Sawati	Qarghai	720	54548	25
76	Qala Rahim	Qarghai	1680	56228	26
77	Mufti qala	Qarghai	200	56428	
78	Pacha qala	Qarghai	750	57178	27
79	Damanji	Qarghai	480	57658	
80	Pator Gambah	Qarghai	820	58478	
81	Arwa	Qarghai	940	59418	28
82	Kolalan	Qarghai	240	59648	
83	Najaran	Qarghai	640	60298	29
84	Charbagh	Qarghai	550	60848	
85	Safakhil	Qarghai	420	61268	
86	Karimabad	Qarghai	510	61778	
87	Tarkhil	Qarghai	1270	63048	30

ANTHROPOMETRIC MEASURMENT AND STATUS OF VIT (A) INTAKE

Date: /12/9 Cluster Number : / __ / __/ Team Number : __

Range of birth dates : From: ____________________ Until : _________________ Area:

No	Age(Months)	Sex(M/F)	Weight(kg)	Height(cm)	Oed(Y/N)	Vit A intake			Remarks
						Yes	No	Hist	
1									
2									
3									
4									
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31									

Annexe III

Household Sociocultural Status

1- Type of family living in the H.H.

1- nuclear 2- Composite ☐

2- Number of persons living in the H.H ☐☐

3- Number of rooms, including hall ☐☐

4- Crowding indesx (person/ room) ☐

Score : 5 or more person / room = 0 4 to less than 4 = 1

2 to less than 4 =2 Less than 2 = 3

5- Sanitaion

Presence of : ☐

* Pure water supply all day ☐ Score : all present = 3
* Electricity ☐ 2 out of 3=1
* WC in side H.H ☐ 1 out fo 3=1

6. Education level of father

Score : Illiterate / read / write = 2 ☐ Primary = 4 ☐ Preparatory = 6 ☐

secondary = 8 ☐ university = 10 ☐

Sociocultural status (cont.)

7. Educaton and work of mother . ☐

Score :				
Illiterate / read / write	Not working =	1 ☐	Working =	2 ☐
Primary	Not working =	1 ☐	Working =	2 ☐
Preparatory	Not working =	1 ☐	Working =	2 ☐
Secondary	Not working =	1 ☐	Working =	2 ☐
University	Not working =	1 ☐	Working =	2 ☐

8- Social class:

Additem No. 4 + 5 + 6 + 7 = ☐☐ then

Use the score

1- high = 21 - 26

2- middle = - < 21

3- Low = - < 17

4- V. Low = < 13

II. Feeding & weaning Practices of Child < 2 Years

1- When did you start breast feeding ? ☐

1- first few hours   2- within 3 days   3- later   4- Never

2- How long did you exclusively breast feed ☐

1- Less than 4 month   1- 4-6month   3- up to one year   4- still

3- How long did you breast feed your child? ☐

1- < 4 month 2- up to 6 month 3- up to one year 4- up to one &half year 5- two years

4- How did you stop breast feeding ? ☐

1- Suddenly   2- Gradually   3- Didn't stop

5- Who advised you weaning your child? ☐

1- relative or friends   2- Daya   3- PHC . staff

6- When did you start complementary feeding ? ☐

1- Before 4 month   2-4-6 month   3- 6 month -Yr.   4- After 1 Yr .   5- Not yet

7- List kind of foods given at the beginning in order. ☐

* ____________ * ____________ * ____________ * ____________

* ____________ * ____________ * ____________ * ____________

8- how many times did you give complementary foods / day ? ☐

9- Did you give your baby the scheduled vaccines ? ☐

1- Regularly   2- Irregularly   3- No

10 - has the child suffered from any illness during the last month ? ☐

1- Diarrhea or vomiting   2- Respiratory infect .   3- Fever   4- None

11- during the child's illness do you change the usual child diet ? ☐

1- Yes   21- No

12- during the child's illness do you contine breast feeding ? ☐

1- contnue as usual 2- Stop breast feeding 3- Increase frequency 4- Decrease frequency

Abbreviation

ACF = Action contra la fiam

BDN = Basic Development Needs

BF = Breast Feeding

BHU = Basic Health Unit

BMN = Basic Minimum Needs

CCMAC = Comprehensive Care for Malnourished Afghan Children

CHW = Community Health Worker

EPI = Expanded Program on Immunization

KAP = Knowledge Attitude and Practice

MCH = Maternal Child Health

MW = Median Weight

ORT = Oral Rehydration Therapy

OW = Observed Weight

PHC = Primary Health Care

SD = Standard Deviation

SMI = Safe Motherhood Initiatives

TBA = Trained Birth Attendees

UNICEF = United Nation International Children Emergency Fund

VHV = Village Health Volunteer

VHW = Village Health Worker

WHO = World Health Organization

Executive Summary

1. According to the Health and nutrition priorities of UNICEF for 1999 in Afghanistan, CCMAC (Comprehensive Care for malnourished Afghan Children) as specialized national NGO submitted its detailed project proposal. out lining the objectives, methodology and budgetary Cost to UNICEF for conducting nutritional status survey in Laghman (Surrounding Mehterlam).

2. While conducting the nutritional status survey the WHO recommended 30 cluster sampling technique was applied in three areas surrounding Mehterlam (Alishing, Alingor, Qarghi).

3. Time frame for project implementation was scheduled as following:

   * Data collection: 01.05.99 – 03.05.99
   * Training of the surveyors: 04.05.99 – 08.05.99
   * Population information: 09.05.99 – 10.05.99
   * On site data collection: 11.05.99 – 25.05.99
   * Analysis and preliminary reports were completed by the end of June 1999.

4. The survey covered 923 children under five year (6- 59 months) in 30 cluster.

5. The survey questionnaire included the sociocultural status of community, feeding and weaning practice and the status of Vit A intake in target group.

6. The anthropometric measurements were taken by trained survey teams consisted of surveyors (a medical doctor + a nurse) and a local guide under the close supervision of a senior medical doctor.

7. During the course of the survey a sub sample of the cluster was re-measured by the supervisor, to ensure that the estimates were accurate. The equipment were also regularly checked for accuracy and re-calibrated if necessary.

8. Work sheets for data analysis were prepared and reviewed by supervisory team than data entered and analyzed by using Epi Info version 6.04b.

9. Results, acute malnutrition:

Acute malnutrition rates according to age group, Laghman May 1999

	Z- Score	% of Median
6 – 59 months		
GLOBAL	6.4%	3.8%
95% Confidence Interval	4.3 – 9.2%	2.2 – 6.2%
SEVER	1.0%	0.5%
95% Confidence Interval	0.3 – 2.6%	0.1 – 1.9
6 – 29 months		
GLOBAL	8.7%	5.1%
95% confidence Interval	5.8 – 12.8%	3.0 – 8.6
SEVER	1.4%	0.7%
95% Confidence Interval	0.4 – 3.7%	0.1 – 2.7%

N. B. There were two children noted to have oedema.

10. Main Recommendation

→ **Strengthening** of PHC Services with special focus on nutrition program through:

- Starting growth monitoring of children at BHC and MCH units.
- Upgrading the knowledge and skills of PHC health workers including TBAs and VHVs on nutrition especially early detection of malnutrition and referral of severely malnourished children for proper care.

→ **Enhancing** the effectiveness of SM1 through:

- Increase the number of TBAs in the province to reach at least one TBA for each village.
- Upgrading the knowledge and skill of TBAs as well as CHWs on exclusive breast feeding and management of Diarrhea .

→ **Working** for establishing nutrition promotion committee at zonal level:

- To promote coordination among agencies for a better coverage of vulnerable individuals and families.
- To develop a suitable complementary food from a mixture of locally available products to replace expensive imported foods.
- To establish the nutrition center in BHCs to setup the supplementary feeding programs if required and ongoing nutrition education program.

→ **Repeat** this kind of assessment in other parts of the province with different living conditions and hence different coping mechanism.

Introduction

This survey was conduced to assess the nutritional situation and the underlying factors of malnutrition in target population at provincial level and to formulate policies or choose appropriate interventions for combating or preventing malnutrition.

Therefore, collection of population based anthropomentric data of children under five years of age can help in identification of nutritional problems.

Also the assessment of sociocultural status of community and the status of feeding and weaning practice can help in identification some of its causes.

This survey was conducted in the surrounding of Mehtrerlam (Laghman province in Alishing Alingar and Qarghai districts, it covered a total of 923 households.

In this survey the anthropometric measurement such as age, weight and height has been chosen to evaluate the presence of children nutritional problem. This evaluation will enable us to estimate the magnitude of the problem of malnutrition in the area on behalf amongst each population groups with a view focusing on interventions for those children in urgent need.

Objectives

To determine the prevalence of malnutrition rate among children under five years of age as an indicator of overall nutritional status of general population.

To identify the sociocultural status of To know the effect of feeding and weaning habits on nutritional status of children community and its relation with prevalence of malnutrition .

To know if there is any difference in malnutrition rates in different age group. under <2 years.

To make appropriate recommendation for intervention to correct the nutritional deficiency of affected children age 6 – 59 months.

Description of the Area;

Laghman with an area 7.227km2 located in eastern Afghanistan, encompasses high mountains of the Hindukush in the north, with many peakes between 1400and1500 meters from which converging two rivers (Alishing and Alingar).
Laghman is bounded on the north by Badakhshan on the east by Kunar, on the South by Nangrahar and Kabul and on the west by Kapisa.
According the unit data statistic 1999 the total population of the province estimated about 496965 and the target under five population estimated about 99393, target population in survey area estimated in Alishing 2.963 in Alingar 15.363 and in Qarghai 23.551.
Mehterlam the capital of province rests on the central plain near the convergence of Alishing and Alingar rivers. Laghman has divided on six district (Alishing, Alingar, Dawlat Sha, Mehterlam, Nooristan, Qarghai). Other necessary information about average population density in village, Mean percentage of occupation, No. of health facilities, health manpower, education ratę and facilities and source of water, present in (Annex-1).

Methodology

Type of Survey and sample size:
Two stage cluster survey was conducted. A sample size of 900 children (30 clusters x 30 children) will provide a reliable estimate of the malnutrition rate, regardless of the actual malnutrition rate or the total size of the population. The surveying teams were asked to include 31 children in the 30 clusters identified in the determined area.
The total population of under five children in the selected area was estimated to be 12607 according estimation used by the Expanded Program on Immunization for mass immunization campaigns in 1999.

Cluster sampling:
The thirty clusters were randomly selected from a previously established list of villages (areas depending on one single head of community(see annex –II) and geographical sub divisions compiled through a cumulative population lists.

Household and family selection:
To identify the households, the surveying team with the help of the Head of Community went to the center of the village. They randomly choose the direction to start by spinning a pen. The first house to be surveyed will also be selected randomly. by numbering each of the houses in the chosen direction from the center up to the limit of the village and by picking one of the numbers. After selection of the first house, the next one is chosen by leaving the first by the main entrance and taking the next one on the left. If the limit of the village was reached before the 30 children were completed, then the team returned to the center and repeated this process.

Whenever a house was empty, or when there was no children between 6 and 59 months, the next one on the left will be visited. In case there were more than one family living in the same house or compound, each mother with eligible children will assign a number and only one family will be selected, by drawing a number out of a bag.

Team composition and preparation:
Nine teams of three male surveyors completed the 30 cluster over a period of 14 days. Massages and questions to the mother were asked through her husband or a male member of the family.
A comprehensive training was organized and the local population informed prior to the field work.

Information collected (see annex III)

Anthropometric measurement:
Age in months, determined as accurately as possible with the help of a local event calendar. Weight (in Kg), recorded to the nearest 100 grams by a 25 kg Salter scale. Height (in cm); children aged more than 85cm were measured standing up, while children less than 85cm were measured lying down, to the nearest mm.
Absence or presence of bilateral oedema

Feeding and Weaning practice:
Starting breast feeding.
Duration of exclusive breast feeding.
Starting complementary B.F.
Status of breast feeding stopped.
Status of vaccination intake
Eating habits during illness
Status of B.F. during illness
Presence of illness at last month
Status of Vit. A intake

House hold sociocultural status including:
Crowding indices (person/room)
Sanitation status (presence of pure water, electricity, WC)
Education level of father and mother
Number of persons in the family according to their age and sex.
Who is eating first.

Definition of the nutritional status

Weight for height indices:
The prevalence of acute malnutrition was determined using the weight for height index. From a single height, it is possible to draw a distribution curve of the weight of the children from the reference population (NCHS data). Then, the weight for height index of a child from the studied population can be expressed as a Z-core or as a percentage of the median.

The expression of the weight for height as a Z Score (WHZ compares the observed weight (OW) of the surveyed child to the mean weight (MW) , for the same height, of the reference population (NCHS data). The standard deviation (SD) of the reference population curve is used as a measurement unit.

The expression of weight for height as a percentage of the median (WHM) compares the observed weight value (OW) to the median weight (MW) of the reference population, for children of the same height.

The percentage of the median has been calculated to provide a simple interpretation of the data and to allow comparison with previous surveys. It is also used from the admission and discharge criteria in feeding programs. The Z-Score provides a value with higher statistical significance.

Definition of acute malnutrition according to the weight for height index (W/H), expressed as a Z-Score or as a percentage of the median:

	Z-Score expression	% of median expression
Sever	W/H < -3 SD And / or bilateral oedema	W/H < 70% and/or bilateral oedema
Moderate	-3 SD< W/H< -2 SD	70% < W/H < 80 %
Without	W/H> -2 SD	W/H>80%

Bilateral oedema

Bilateral oedema is an indicator of kwashiorkor, one of the major clinical forms of severe acute malnutrition (as well as marasmus and marasmus/kwashiorkor) Children with bilateral oedema are automatically categorized as severely acutely malnourished, regardless of their weight for height percentage. This clinical sign is checked by applying a pressure on both feet for three seconds. A persisting shallow print being the positive sign for oedema.

Height for age index (H/A):
The height for age index indicates whether a child of a given age is stunted or not, but does not differentiate between tow children of the same age and height with regards to their weight. Therefore, this index reflects the past nutritional history of a child rather than his current nutritional status. This is mainly used to identify chronic malnutrition, from a given age. The distribution curve of a child from the studied population is usually expressed as a Z-Score (HAZ) and the same cut off points than those for the weight for height indices are being used:

* H/A < -3 SD defines a severe degree of chronic malnutrition
* - 3 SD < H/A ≤ -2 SD defines a moderate level of chronic malnutrition:
* H/A≥ -2 SD is the cut off point for no chronic malnutrition

Measuring Techniques and Recording

Weight:
According to the field guide, 25 kg hanging spring scales marked out in steps of 0.1kg were provided to the survey teams (one for each team). checked was being After weighing pants attached to the hook of the scale.It is than adjusted to zero before each weighing. The clothes of children were removed and the weighing pants were put on. In a free hanging position of the child the weight was read to the nearest 0.1kg with the scale at eye level and recorded in the form. In very rare cases (probably 1%) in the girls of older age (near 5 years) who were not ready for taking off the clothes, an estimated weight of the clothes was subtracted from the overall weight as correction for the clothes.

Height:
The height of children equal or above 85 cm was measured in the standing position to the nearest of 0.1 cm, while children less than 85cm was measured on a horizontal measuring board. In both cases the shoes of the children were removed and the other steps were followed according to the Field Guide.

Age:
Whenever the age of the child was known to the parents, it was noted down. If the parents/guardian were not certain about the age, in such cases the surveyor were trained to obtain information on the age to the nearest possible value by asking various questions on the birth date.

Oedema:
This indicator was examined by applying moderate thumb pressure for a few second, to the back of the foot or the ankle. After removing the thumb, if the impression was remaining for some time and also the same signs were observed in the other foot, the case was considered as having oedema.

Cut – off Points:
In this assessment, WHO definition on malnutrition has been adopted which defines malnutrition as: the number of children with a weight for height of less than –2s.d. or -2 z score below the median of the reference are called seriously or acutely malnourished. The second cut off point, -3 z score (or –3 SD) below the median is classified as severely malnourished. Also children with oedema are considered to be malnourished. It is an additional weight even though their weight may not fall below -2 Z Scores.

Data analysis and indicators of malnutrition

Data from the questionnaires were entered into the Epi- Info software package. A sub-module Epi Nut was also used which calculate z-score values (standard deviation units) for the main anthropometric indices:

Weight for height analysis carried out by the consultant nutritionist. Cross tabulations of frequency of different household characteristic produce. The relationship between some of these characteristics and the outcome measures based on weight, height, and age, and sickness in the last one month among the youngest children in the households, were also investigated.

Z-Scores give the difference between a given measurement for an individual child and the mean of the reference population. here, the USA National center. For example, a child's length is 2 standard deviations below the mean length in the reference population the z score is –2.

The tow preferred anthropometric indices for determining nutritional status are weight for height and height for age, as these discriminate between different physiological and biological processes)

Weight for height can be used as an indicator for wasting (i.e. thinness). It is independent of age and considered to be sensitive indicator of the current nutritional status. Children with weight for height z scores < -2 are considered to be suffering from acute global malnutrition. They are wasted if the weight for height z score is < -3, the children are severely malnourished. Height for age is considered an indicator for stunting (i.e., shortness) which is frequently associated with poor overall

CCMAC

Nutritional Survey

Surrounding of Mehterlam (Laghman Province)

Afghanistan

May - 1999

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Nutritional Survey

Surrounding of Mehterlam (Laghman Province)

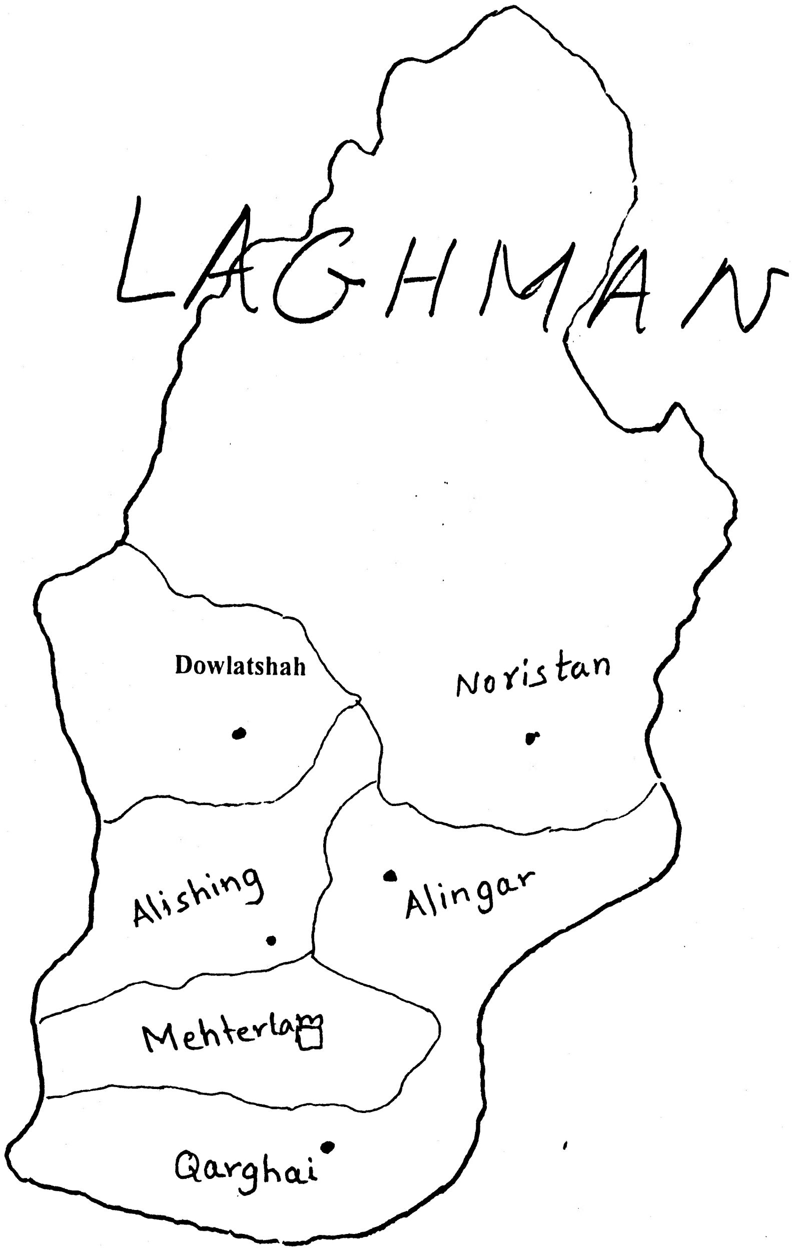
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NUTRITIONAL SURVEY



Surrounding Mehterlam

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